



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,414	02/17/2004	Won-keun Yu	03918-P0040A	1308
24126	7590	10/10/2006	EXAMINER	
ST. ONGE STEWARD JOHNSTON & REENS, LLC 986 BEDFORD STREET STAMFORD, CT 06905-5619			NGUYEN, DONGHAI D	
			ART UNIT	PAPER NUMBER
			3729	

DATE MAILED: 10/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/780,414		YU ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Donghai D. Nguyen		3729	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 July 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 and 36-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 36-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 July 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
- 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
- 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. The amendment filed on July 13, 2006 has been considered and made of record.

### ***Drawings***

2. The drawings were received on July 13, 2006. Figs. 4 and 9 are accepted and Fig. 1 is objected by the Examiner.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "22" and "Control Unit" in the amended Figure 1 have both been used to designate a camera. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

Art Unit: 3729

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-15 and 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,212,751 to Hattori in view of US Patent 6,434,264 to Asar.

Regarding claims 1 and 38, Hattori discloses an apparatus for positioning back-up pins on a support plate for supporting a circuit board thereon, the apparatus comprising: a back-up pin plate (200, see Fig. 9) having a substantially planar upper surface for positioning back-up pins (201) thereon; a back-up pin stand (236) for placing back-up pins therein; a camera (56, see Fig. 3) for taking surface images of the circuit board (24, See Col. 12, line 63 to Col. 13, line 5) to be supported by a plurality of back-up pins; a control unit (160) having a display unit (186) for displaying the surface images of the circuit board taken by the camera (56 see Fig. 13) and the control unit allowing a user to allocate a plurality of support locations (see Fig. 7) for supporting the circuit board (as shown in Fig. 1) with the back-up pins at locations not interfering with parts (32) disposed on the circuit board (24) while viewing the images of the circuit board displayed on the display unit (186, see Fig. 13) ; and a transfer member (30) adapted to transfer a plurality of back-up pins from the back-up pin stand to the allocated support locations on the back-up pin plate (See Fig. 9). Hattori is silent regarding the display a first image representative of a portion of the surface of the circuit board and a second image representative of substantially the entire surface of the circuit board at the same time. Asar teaches the display unit (240, see Fig. 9) that display the display a first image (bottom left) representative of a portion of the surface of the circuit board (52) and a second image (top right) representative of substantially the entire surface of the circuit board for allowing user/operator rapidly inspect the surface of the circuit board (see Col. 6, lines 31-44). Therefore, it would have been obvious to one having ordinary skill in the

art at the time the invention was made to modify the invention of Hattori by utilizing the display unit and display technique as taught by Asar for allowing user rapidly inspect the surface of the circuit board.

Regarding claim 2, Hattori discloses at least a portion of the back-up pin plate includes a magnetically material, and each of the back-up pins includes a magnetic portion for attaching onto the back-up pin plate by a magnetic force between the back-up pin plate and the back-up pin (see Col. 14, lines 19-20).

Regarding claim 3, Hattori discloses the camera (56) is a line charge-coupled device camera (see Fig. 6).

Regarding claim 4, Hattori discloses the first image is a real-time image taken by the camera and the second image is an image composed of a plurality of the real-time images taken by the camera (See Col. 13, lines 19-40).

Regarding claims 5-7 and 10, Hattori discloses the control unit includes a display screen (186), a user interface (170) and/or input device (172 See Fig. 6).

Regarding claims 8-9, 11-12 and 39-40, Hattori does not disclose a mouse as input device of the control unit for entry and the user interface comprises a selection menu. Asar teaching control unit is a mouse (98) and user interface comprises selection menu (see Fig. 9) for inputting and selecting the desired views and operations of the circuit board. Therefore, it would have been an obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Hattori by utilize the mouse and selection menu as taught by Asar for inputting and selecting the desired views and operations of the circuit board.

The rejection of claims 11 and 12 is as same as the above discussion.

Regarding claim 13, Hattori discloses the user interface comprises a PCB loading mode for loading a circuit board onto the apparatus (See Fig. 1 and Col. 10, lines 19-29).

Regarding claim 14, Hattori discloses the back-up pin stand (236) comprises a plurality of openings (238) for receiving lower portions of the back-up pins (see Fig. 9).

Regarding claim 15, Hattori discloses the camera is coupled with the transfer member for moving together along a Cartesian coordinate (See Fig. 3 and Col. 11, lines 31-34).

6. Claims 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hattori in view of Asar.

Hattori/Asar do not disclose the plurality of back-up pins having a general cylindrical shape with upper portion of the back-up pins having different diameter include about 8 mm and about 2 mm. It would have been an obvious matter of design choice to one having ordinary skill in the art at the time the invention was made to choose a different size and shape for the upper portion of the back-up pin. Since Applicants have not disclose the specific diameter i.e., about 8 and 2 mm of the upper portion of the back-up pins, would solve the stated problem or for any particular purpose and it appears that the invention would perform equally well with the back-up pins as disclosed by Hattori.

#### ***Response to Arguments***

7. Applicant's arguments with respect to rejected claims 1-15 and new claims 36-40 have been considered but are moot in view of the new ground(s) of rejection.

*Conclusion*

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donghai D. Nguyen whose telephone number is (571)-272-4566. The examiner can normally be reached on Monday-Friday (9:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter D. Vo can be reached on (571)-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DN

October 2, 2006



MINHTRINH  
PRIMARY EXAMINER